



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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MAR 18 1993

FEDERAL EXPRESS
OVERNIGHT DELIVERY

Anne Hiller
DNREC
715 Grantham Lane
New Castle, DE 19720

RE: Review of Draft Feasibility Study for Standard Chlorine

Dear Ms. Hiller:

EPA has reviewed the Draft Feasibility Study for Standard Chlorine of Delaware, Inc., dated February 1993. EPA's comments on the report are attached to this letter.

Overall the report follows the format delineated in EPA's guidance document, but there are some deficiencies which must be addressed in the revised report. Detail on these deficiencies are addressed in the attached comments. The major highlights of EPA's comments are as follows:

1. Each of the alternatives (with the exception of No Action) must address compliance with ARARS and adequate protectiveness of human health and the environment. In particular, Alternative 2 must be upgraded to comply with this requirement.
2. Each of the alternatives must evaluate remedial action for the Catch Basin #1 and subsurface soils. Subsurface soils should be treated as a separate medium in each of the alternatives.
3. Time frames for remediation as well as amount of material to be treated must be delineated for each alternative.
4. The report lacks sufficient information to demonstrate elimination of some of the insitu treatments for the surface and subsurface soils. The elevated levels of contaminants in the subsurface soils act as a continuing source of contamination for ground water. EPA has chosen various insitu treatment technologies at numerous other sites as the remedial alternative for subsurface soils and considers it to be a viable alternative for Standard Chlorine. Therefore, EPA is requiring that at least one of the alternatives

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discussed in Section 4 and 5 of the Feasibility Study include one or more of the following technologies:

- soil vapor extraction
- soil flushing
- insitu air/bio sparging
- insitu steam extraction
- hot air steam stripping

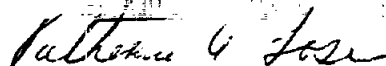
A case study using hot air steam stripping proved to be effective in removing chlorinated benzenes.

In addition, Modelling (such as MULTIMED or Summers Method) must be conducted to develop clean-up levels for the subsurface soils that are protective of ground water. This must be completed before EPA can issue a ROD. I recommend that this be conducted simultaneously with the finalization of the FS. Standard Chlorine must submit a draft proposal for conducting the modelling for EPA's comment and review. EPA's hydrogeologist can work with Standard Chlorine during the process to insure that the modelling satisfies EPA's criteria. Standard Chlorine must submit a draft proposal by April 14, 1993.

In order to expedite the review process, I recommend that we have an on-board review meeting with Standard Chlorine to discuss and clarify the enclosed comments.

If you have any questions, I can be reached at (215) 597-0910.

Sincerely,



Katherine A. Lose
Remedial Project Manager
DE/MD Section

cc: Dawn Ioven, EPA
Bernice Pasquini, EPA
Robert Davis, EPA
~~Paul Johnston, SCD~~ *not sent*
Peter Ludzia, EPA

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